

CHAPTER 1

Bulk Carriers

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Bulk Carriers

Total Dry Bulk Fleet
12,312 ships

Source: USDA

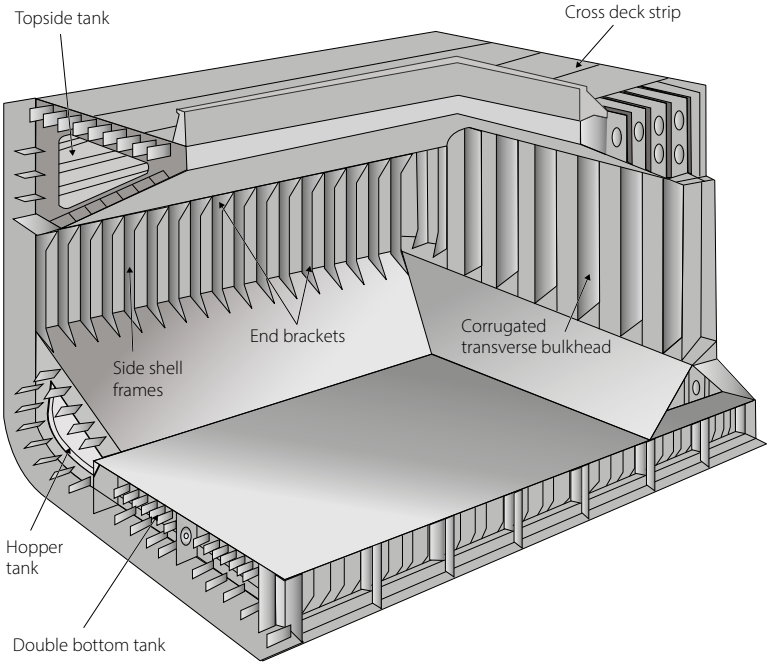
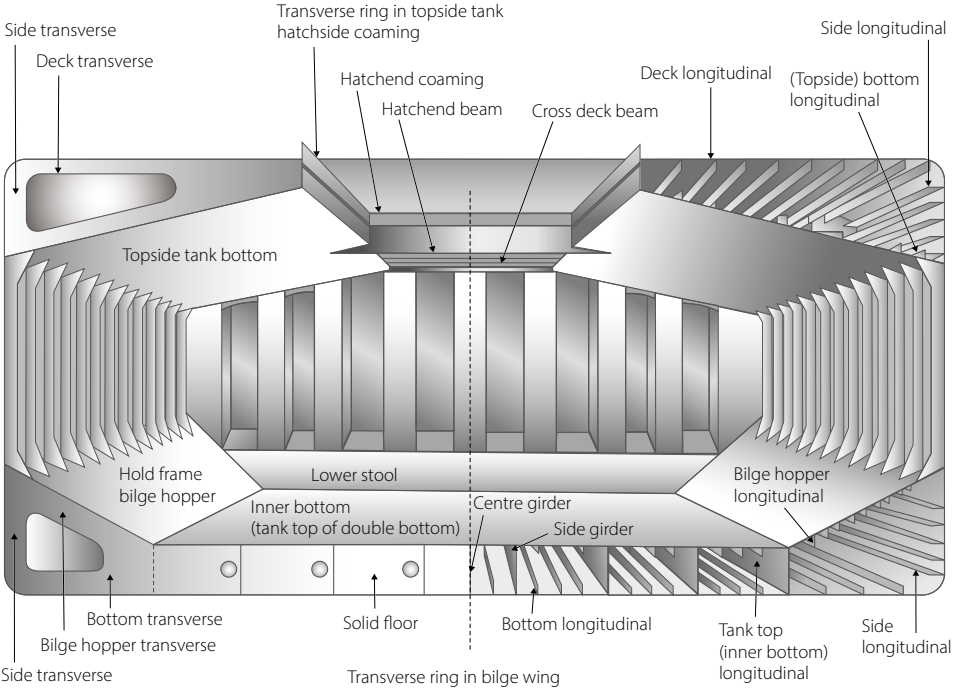


Bulk carriers make up 10% of the world's shipping and are generally referred to as the bulk fleet.

They range in size from 500 DWT for a mini bulk carrier to 400,000 DWT for a Valemax very large ore carrier (VLOC).

They are used to transport a wide variety of cargoes, including iron ore, coal, cement, bauxite, fertilisers, grain and other dry agricultural products.

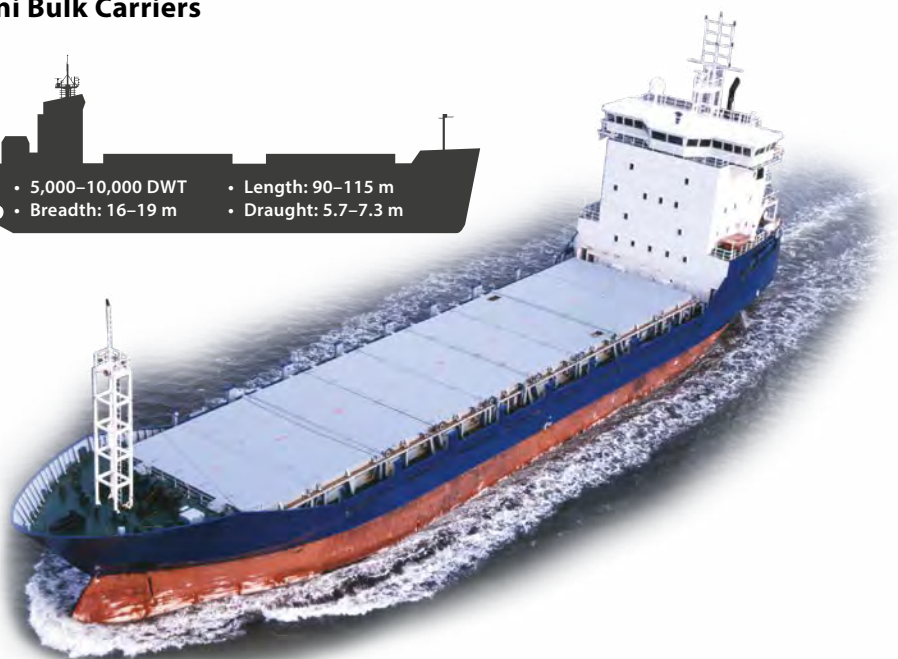
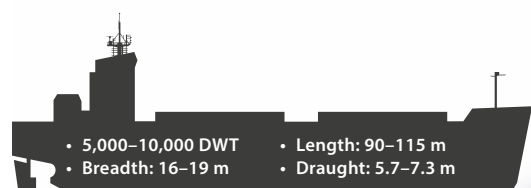
Bulk carriers can either be geared (cranes and other cargo equipment are fitted on the bulk carrier) or gearless (terminal equipment is used for cargo operations).



Cross-sections of a typical bulk carrier

Types of Bulk Carriers

Mini Bulk Carriers



Mini bulk carriers range from 500 to 10,000 tonnes, the smaller carriers generally being single hold. They can be used for many different cargoes and some are equipped with gantry cranes. Many are fitted with moveable bulkheads for greater flexibility. Great care is

required when carrying varied commodities, particularly finer grain, to avoid cross-contamination due to leakage around the sides of the bulkhead.

These ships often have minimal manning and this, coupled with the frequent port visits, may lead to severe fatigue among the crew.

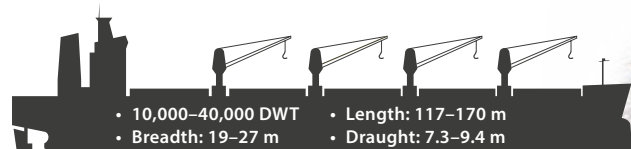
Handysize

Handysize carriers range from 10,000 to 40,000 DWT. They generally have five hatches and many are fitted with cranes to enable cargo loading and discharge at berths without such facilities. The smaller ships can carry containers and deck cargo, as well as bulk cargo. Handysize ships can be subcategorized as Small Handy (up to 25,000 DWT), Mid-size Handy (up to 35,000 DWT) and Large Handy (up to 40,000 DWT).

Handysize

3,488 ships

Source: USDA



Subcategory: Geared Bulk Carriers

In the Handysize/Handymax range, there is a small percentage of geared Panamax ships that have cranes, derricks or conveyors that allow them to load or discharge cargo in ports without shore-based equipment.



The term 'bulk carrier' can be misleading. Although they do carry bulk cargoes, their gantries, hold shapes and hatch top configurations mean they are also capable of carrying containers and a mix of general cargo.



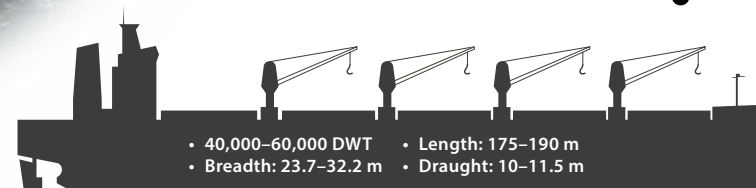
Handymax/Supramax

Handymax and Supramax bulk carriers range from 40,000 to 60,000 DWT. The term 'Supramax' typically applies to ships over 50,000 DWT.

Handymax

3,713 ships

Source: USDA



Types of Bulk Carriers

Subcategory: Woodchip Carriers

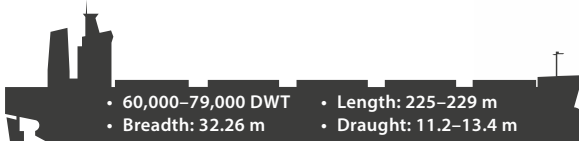
Woodchip carriers are designed to carry woodchips (shredded wood) in bulk. They are usually constructed with six watertight (rather than weathertight) cargo holds to prevent water ingress. This is particularly important as contact with water causes woodchips to expand, which could cause severe structural damage to the ship. Additional security measures are also incorporated to protect the cargo, such as prevention of water penetration through air pipes and ventilation ducts.

Carriage capacities are usually expressed in cubic feet (or metres). For example, a Panamax size woodchip carrier has a capacity of 3.6 million ft³.



Conveyor belts on deck are used to pour the woodchips into the cargo holds. As the cargo holds fill, bulldozers are used to compress the cargo. When discharging, the ship's cranes are used together with a grab bucket system running along the bottom of the cargo compartments. The woodchips are transported by conveyor belts to the forecandle and discharged through a single discharging point. Alternatively, grabs may be used for unloading.

Panamax ●



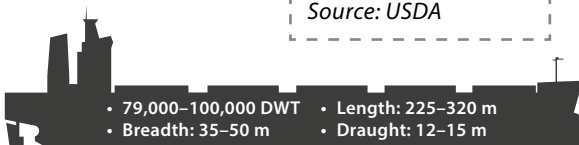
Panamax
2,275 ships

Source: USDA

These ships range from 60,000 DWT to around 79,000 DWT. The term 'Panamax' indicates that the ship has been designed within the original size limitations for passage through the Panama Canal.



Post-Panamax ●



Post-Panamax
585 ships

Source: USDA

'Post-Panamax' was the term given to ships that did not meet the dimension criteria for the Panama Canal before the expanded canal locks were opened in 2016.

